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PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY.

VOL. IV. JULY—DECEMBER, 1844. No. 31.

Stated Meeting, July 19.

Present fifteen members.

Dr. PATTERSON, Vice-President, in the Chair.

Letters were announced and read:—

From the Connecticut Historical Society, dated Hartford, April 25, 1844, acknowledging the receipt of Nos. 28 and 29 of the Proceedings of the Society:—

From the Academy of Natural Sciences of Philadelphia, dated Philadelphia, June 23, 1844, acknowledging the donation by this Society of its Transactions, Vol. IX. Part 1. New Series:—

From M. Gustave d'Eichthal, dated Paris, Dec. 20, 1843, on presenting a memoir on the primitive history of the Oceanic and American races:—

From Mr. F. Stoughton to Mr. Thos. Dunlap, dated New York, June 25, 1844, in reference to a package from the Society, forwarded by Mr. Stoughton to the Royal Academy of History at Madrid:—

From the National Institute at Washington, in reference to certain resolutions of the Committee of the Institute, concerning the publication of a third part of the Proceedings of the Institute:—

From Dr. T. Romeyn Beck, dated Albany, July 1, 1844, informing the Society, that by a late law, the State Library of New York had been placed under the care of the Regents of the University; and, also, in reference to certain deficiencies

in the sets of the "Proceedings" of this Society, and to the Transactions of the Historical and Literary Committee: when, on motion of Dr. Dunglison, it was resolved, that so much of Dr. Beck's letter as relates to the subjects above mentioned be referred to the Librarian, with power to take order thereon.

The following donations were announced:—

FOR THE LIBRARY.

Archives du Muséum d'Histoire Naturelle, publiées par les Professeurs Administrateurs de cet Établissement. Tome III. Livraison 4e. Paris, 1843. 4to.—*From the Professors of the Museum.*

Annales des Mines. Quatrième Série. Tome IV. 5e Livraison de 1843. 8vo.—*From the Engineers of Mines, Paris.*

Journal Asiatique. Quatrième Série. Tome II. Nos. 9 and Nov., Dec., 1843. 8vo. Tome III. Nos. 11 and 12. Jan., Feb., March, 1844.—*From the Asiatic Society of Paris.*

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. II. No. 3. May, June, 1844. 8vo.—*From the Academy.*

Mémoire sur l'Histoire Primitive des Races Océaniennes et Américaines, lu à l'Académie des Sciences Morales et Politiques les 9 et 16 Septembre, 1843. Par M. Gustave d'Eichthal. 8v[illegible].—*From the Author.*

Crania Ægyptiaca; or Observations on Egyptian Ethnography, derived from Anatomy, History, and the Monuments. By Samuel George Morton, M.D. From the Transactions of the American Philosophical Society, Vol. IX. Philadelphia, 1844. 4to.—*From the Author.*

Institut Royal de France. Calendrier pour l'année, 1843. 12mo.—*From D. B. Warden, Esq., of Paris.*

The American Journal of the Medical Sciences. Edited by [illegible] Hays, M.D. No. XV. July, 1844. 8vo.—*From the Editor.*

The Medical News and Library. Vol. II. July, 1844. No. 19. 8vo.—*From Lea & Blanchard.*

Journal of the Franklin Institute of the State of Pennsylvania. Third Series. Vol. VIII. July, 1844. 8vo.—*From Dr. R. M. Patterson.*

President's Message and accompanying Documents, containing the Negotiations and Treaty of Washington; also Reports, and Map

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of Texan Boundary, and of the North-Eastern Boundary. December, 1842. 8vo.—*From Major J. D. Graham.*

Map of the Boundary Lines between the United States and the adjacent British Provinces, from the mouth of the River St. Croix to the intersection of the Parallel of 45 degrees of North Latitude, with the River St. Lawrence near St. Regis. Showing the Lines as respectively claimed by the United States and Great Britain under the Treaty of 1783, as awarded by the King of the Netherlands, and as settled in 1842 by the Treaty at Washington. Compiled under the direction of Major J. D. Graham, of the Topographical Engineers, Commissioner. Seven copies in sheets, one copy mounted.—*From the same.*

Profile with the Spirit Level of the due North Line from the Monument at the Source of the River St. Croix to the River St. John. Surveyed in 1840 and 1841, under the direction of Major J. D. Graham, etc. etc. Five copies in sheets, 1 copy mounted.—*From the same.*

A Map of the Extremity of Cape Cod, including the Townships of Provincetown and Truro: with a Chart of their Sea Coast and of Cape Cod Harbour, State of Massachusetts. Executed under the direction of Major J. D. Graham, U. S. Topographical Engineers, during portions of the years 1833, 1834, and 1835. Engraved by order of the House of Representatives of the United States, under the direction of the Bureau of Topographical Engineers, to accompany Document 121, 26th Congress, 2d Session. Seven copies, fine paper, 4 sheets each.—*From the same.*

ADDITIONS TO THE LIBRARY BY PURCHASE.

Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences; par MM. les Secrétaires Perpétuels. Tome XVIII. Nos. 5 to 18 inclusive, 1844. 4to.

Astronomische Nachrichten. Professor Schumacher, Editor. Nos. 503 and 504. May 9 and 23, 1844. 4to.

Dr. Bache announced the decease of Dr. John C. Otto, a member of the Society, who died in Philadelphia on the 26th June, 1844, aged 70 years.

In answer to a question put by Dr. Patterson, Mr. Lukens stated, that the amalgamation of mercury with iron, which was referred to by him at the last meeting, was observed by Professor Ellett, of South Carolina.

Dr. Bridges remarked, that he had tried the experiment by scraping iron under mercury, but had not succeeded in effecting any amalgamation. He considered, that the amalgamation in the case, which he had described at the last meeting, was complete.

The Treasurer reported, that the whole expenses of the centennial celebration amounted to six hundred and eleven dollars and two cents.

Stated Meeting, August 16th.

Present, fourteen members.

Dr. CHAPMAN, Vice-President, in the Chair.

Letters were announced and read:—

From the Horticultural Society, dated London, May 7th, 1844:—

From the Linnæan Society, dated London, May 29th, 1844: and

From the Zoological Society, dated London, May 16th, 1844; respectively acknowledging the receipt of Part I, Vol. IX. of the Transactions of this Society.

The following donations were announced:—

FOR THE LIBRARY.

Philosophical Transactions of the Royal Society of London. For the Year 1841. 2 Parts. 4to. For the Year 1843. 2 Parts. 4to.—*From the Royal Society.*

List of the Royal Society, 30th November, 1843. 4to.—*From the same.*

Proceedings of the Royal Society. Nos. 56 to 58, inclusive, 1842, 1843. 8vo.—*From the same.*

Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in the Years 1840 and 1841; under the direction of George Biddell Airy, Esq., M. A., Astronomer Royal. Published by order of the Board of Admiralty, in obedience to Her Majesty's command. London, 1843. 4to.—*From the same.*

Proceedings of the Royal Irish Academy, for the Year 1842–3. Part VII. Dublin, 1844. 8vo.—*From the Academy.*

The American Journal of Science and Arts. Conducted by Professor Silliman, and Benjamin Silliman, Jr. Vol. XLVII. No. I. July, 1844. 8vo.—*From the Editors.*

The African Repository and Colonial Journal. July and August, 1844. Vol. XX. Nos. 7 and 8. 8vo.—*From the American Colonization Society.*

Journal of the Franklin Institute of the State of Pennsylvania. Third Series. Vol. VIII. August, 1844. No. 2. 8vo.—*From Dr. R. M. Patterson.*

The Medical News and Library. Vol. II. August, 1844. No. 20. 8vo.—*From Lea & Blanchard.*

A Theory of the Structure of the Sidereal Heavens, including an Explanation of the Phenomena of Via Lactea and Nebulæ; founded on a new Astronomical Doctrine; being a General Explication of the Astral Collocations upon Geometrical Principles. Part the First. London, 1842. 4to. Anon.—*From the Author.*

An Elementary Treatise on Mineralogy: comprising an Introduction to the Science. By William Phillips, F. L. S. etc. Fifth Edition, from the Fourth London Edition. By Francis Alger. Boston, 1844. 8vo.—*From the Editor, F. Alger.*

The Practice of Medicine: a Treatise on Special Pathology and Therapeutics. By Robley Dunglison, M. D., Professor of the Institutes of Medicine in Jefferson Medical College, Philadelphia; Secretary of the American Philosophical Society, etc. etc. Second Edition. Philadelphia, 1844. 2 Vols. 8vo.—*From the Author.*

Human Health; or the Influence of Atmosphere and Locality; Change of Air and Climate; Seasons; Food; Clothing, etc. etc.; constituting Elements of Hygiène. By Robley Dunglison, M.D., etc. etc. A new Edition, with many Modifications and Additions. Philadelphia, 1844. 8vo.—*From the Author.*

An Autograph Letter from the Rev. Nevil Maskelyne, B.D., F.R.S., Astronomer Royal, to the Rev. Dr. Ewing, formerly Provost of the University of Pennsylvania, dated Greenwich, August 4th, 1775, on the subject of a Project for erecting an Observatory at Philadelphia.—*From Harrison Hall, Esq.*

ADDITIONS TO THE LIBRARY BY PURCHASE.

Philosophical Transactions of the Royal Society of London. For the Year 1808. Part 2. 4to. N. B. The first part of this Vol. is wanting.

Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, par MM. les Secrétaires Perpetuels. Tome XVIII. Nos. 19 to 22 inclusive. 4to.

Tables des Comptes Rendus. Deuxième Semestre, 1843. Tome XVII. 4to.

Dr. Patterson presented a communication, entitled "Observations for the Magnetic Dip, made at several positions, chiefly on the South-western and North-eastern portions of the United States, and of the Magnetic Declination at two points on the River Sabine, in 1840, by Major James D. Graham, of the U. S. Corps of Topographical Engineers," which was referred to a Committee, consisting of Mr. Walker, Dr. Patterson, and Professor Frazer.

An autograph letter from Dr. N. Maskelyne, Astronomer Royal, to the Rev. Dr. Ewing, dated Greenwich, Aug. 4, 1775, in relation to a projected Observatory at Philadelphia, was presented to the Society by Mr. Harrison Hall, and read by the Secretary.

Greenwich, Aug. 4, 1775.

Sir,—I received your late favour, together with your observations of the comet of 1770, and some of that of 1769, for which I thank you, and shall, I believe, communicate to the Royal Society as you give me leave. In the present unhappy situation of American affairs, I have not the least idea that any thing can be done towards erecting an observatory at Philadelphia, and therefore cannot think it proper for me to take any part in any memorial you may think proper to lay before my Lord North at present. I do not mean, however, to discourage you from presenting any memorial from yourself. Were an observatory to be erected at Philadelphia, I do not know any person at Philadelphia more capable of taking the care of it than yourself. Should Lord North do me the honour to ask my opinion about the utility of erecting an observatory at Philadelphia, I should then be enabled to speak out, being always a well-wisher to the promotion of science. You did not distinguish whether the times of your observations were apparent or mean time.

I am, sir,

Your most humble servant,

N. MASKELYNE.

The Rev. Dr. Ewing,

At No. 25 Ludgate Street.

Mr. Smith drew the attention of the Society to sundry improvements in the manufacture of glass for telescopes, and read an extract from the 18th Vol. of the Comptes Rendus, being a communication from M. Arago in relation to the cost of lenses of immense magnitude, which a manufacturer in France proposes to fabricate. The advantages attainable from lenses of such magnitude, some of which have been ordered by the French government, were depicted by Mr. Smith, whose observations gave occasion to remarks from Mr. Justice and Dr. Patterson.

Dr. Dunglison, Reporter, laid before the Society No. 30 of the Proceedings of the Society, from April to June inclusive.

Stated Meeting, September 20.

Present, twenty-eight members.

Dr. Bache, Vice-President, in the Chair.

Letters were announced and read:—

From the Secretary of State, dated Washington, August 24, 1844, announcing that he had forwarded eighteen volumes of the Documents of the Third Session of the Twenty-seventh Congress, for the Library of the Society:—

From the Society for the Encouragement of Arts, Manufactures, and Commerce, dated London, July 17, 1844, acknowledging the receipt of Nos. 28 and 29 of the Proceedings of this Society:—

From Mr. Edward Newman, dated London, July 20, 1844, acknowledging the receipt of Vol. VIII., and the first part of Vol. IX. of the Transactions of this Society; and announcing that he had sent for the Library the third and last part of his History of British Ferns:—

From Col. Totten, dated Engineer Department, Washington, August 21, 1844, on presenting to the Library a copy of Papers on Practical Engineering, No. 2; being a special report on the sea wall at Lovell's Island, in the harbour of Boston, by Col. S. Thayer, Corps of Engineers:—

From Professor Locke, dated Cincinnati, August 13, 1844, accompanying another series of Observations on Terrestrial Magnetism, &c.

The following donations were announced:—

FOR THE LIBRARY.

Public Documents, Third Session, 27th Congress, 1842–43. Senate Documents, 4 Vols. 8vo. Senate Journal. 8vo. House Journal. 8vo. Executive Documents. 8 Vols. 8vo. Reports of Committees. 4 Vols. 8vo. Eighteen Volumes in all.—*From the Secretary of State.*

Philosophical Transactions of the Royal Society of London, for the Year 1844. Part I. London, 1844. 4to.—*From the Royal Society.*

Astronomical Observations made at the Royal Observatory, Greenwich, in the Year 1841, under the direction of George Biddell Airy, Esq., M.A., Astronomer Royal. Published by order of the Board of Admiralty, in obedience to Her Majesty's command. London, 1843. 4to.—*From the same.*

The same Observations made in the Year 1842. London, 1844. 4to.—*From the same.*

Catalogue of the Places of 1439 Stars, referred to the 1st of January, 1840; deduced from the Observations made at the Royal Observatory, Greenwich, from 1836, January 1st, to 1841, December 31. London, 1843. 4to.—*From the same.*

Proceedings of the Geological Society of London. Vol. IV. No. 97. 8vo.—*From the Society.*

Transactions of the Royal Geological Society of Cornwall. Instituted February 11, 1814. Vol. V. 8vo.—*From the Society.*

Royal Geological Society of Cornwall. Twenty-ninth and Thirtieth Annual Reports of the Council, with the President's Address, and Papers and Notices read to the Society. Penzance, 1842–43. 8vo.—*From the same.*

Report of the Thirteenth Meeting of the British Association for the Advancement of Science; held at Cork, in August, 1843. London, 1844. 8vo.—*From the British Association.*

Royal Astronomical Society of London. Proceedings, Vol. VI. Nos. 6, 7, 8. 8vo.—*From the Society.*

Boletin Enciclopédico de la Sociedad Económica de Amigos del Pais. Avril, Mayo. Año 5°. Tomo 3°. Valencia, 1844. 8vo.—*From the Society.*

Boston Journal of Natural History. Containing Papers and Communications, read before the Boston Society of Natural History. Vol. IV. No. 4. Boston, 1844. 8vo.—*From the Society.*

The African Repository and Colonial Journal. Vol. XX. No. 9. September, 1844. 8vo.—*From the American Colonization Society.*

Journal of the Franklin Institute. Third Series. Vol. VIII. September, 1844. No. 3. 8vo.—*From Dr. Patterson.*

Papers on Practical Engineering. Published by the Engineer Department, for the use of the Officers of the United States Corps of Engineers. No. 2. A Special Report on the Sea Wall, built in the Year 1843, for the Preservation of Ram Head, at the N. W. end of Lovell's Island, in the Harbour of Boston, Massachusetts. By Col. S. Thayer, U. S. Corps of Engineers. Washington, 1844. 8vo.—*From Col. Totten, Engineer Department.*

The Electrical Magazine. Vol. I. No. 5. July, 1844. Published Quarterly. London. 8vo.—*From Charles V. Walker, Esq., Editor.*

The Zoologist: a Popular Monthly Magazine of Natural History, &c. Nos. XVI to XX. inclusive. April to August, 1844. London. 8vo.—*From Edward Newman, Esq., Editor.*

The Phytologist: a Botanical Journal. Nos. 38 and 39. July, August, 1844. London. 8vo.—*From the same.*

A History of British Ferns: by Edward Newman, F. L. S., B. S. &c. 2d Edition. Part 3. London, 1844. 8vo.—*From the same.*

The Medical News and Library. Vol. II. September, 1844. No. 21. 8vo.—*From Lea & Blanchard.*

Descriptions of Shells, from the Province of Tavoy, in British Burmah.—*By Augustus A. Gould, M.D.*

Descriptions and Notices of some of the Land Shells of Cuba. By the same. From the Boston Journal of Natural History. Vol. IV. No. 4.—*From the Author.*

The Medical Student: or, Aids to the Study of Medicine. A revised and modified edition. By Robley Dunglison, M.D., &c. Philadelphia, 1844. 12mo.—*From the Author.*

Street Talk, about an Ordinance of Councils, passed the 11th July, 1844, organising a Military Force, &c.—*From Charles Ingersoll, Esq.*

ADDITION TO THE LIBRARY BY PURCHASE.

Astronomische Nachrichten. Professor Schumacher, Editor. Nos. 505 to 510, inclusive, June 15 to July 25, 1844. Title and Index to Vol. XXI. 4to.

Dr. Dunglison announced, that he would be prepared to deliver, pursuant to appointment, the discourse in commemoration of the late President of the Society, in the course of next month. Whereupon, on motion of Mr. Kane, a committee consisting of Mr. Kane, Mr. Ord, and Dr. Patterson, was appointed to make the necessary arrangements.

Mr. Charles J. Ingersoll announced the death of Joseph Bonaparte, Count Survilliers, a member of the Society, who died at Florence, on the 28th day of July, 1844, in his 77th year. A high eulogium on his character was delivered by Mr. Ingersoll, as well as by Dr. Chapman, and on motion of the latter, Mr. Ingersoll was appointed to prepare an obituary notice of the deceased.

Professor Locke presented a farther series of observations on Terrestrial Magnetism, which was referred to the same Committee as the former. The Committee are Professor Frazer, Mr. M'Ewen, and Professor Bache.

Mr. Kane, on the part of a Committee to negotiate with individuals who have claims against the Society, reported progress.

Mr. Smith drew the attention of the Society to certain phenomena, presented by a house provided with a lightning rod, and recently struck by lightning. The electrical fluid did not strike the rod, but communicated with it before reaching the ground. Mr. Smith considered that the rod was not sufficiently elevated above the house.

Stated Meeting, October 4.

Present, sixteen members.

Dr. BACHE, Vice-President, in the Chair.

Letters were announced and read:—

From the Proprietors of the Bowditch Library, dated Boston, September, 1844, acknowledging the receipt of No. 30 of the Proceedings of this Society:—and

From the Horticultural Society, dated London, August 6, 1844, acknowledging the receipt of Nos. 28 and 29, of the Proceedings.

The following donations were announced:—

FOR THE LIBRARY.

Annales des Mines. Redigés par les Ingénieurs des Mines. Quatrième Série. Tome IV^e. VI^e. Livraison de 1843. Novembre, Décembre. 8vo.—*From the Engineers of Mines of Paris.*

Journal Asiatique, ou Recueil des Mémoires, etc. Publiée par la Société Asiatique. Quatrième Série. Tome III. Nos. 13, 14. Avril, Mai, 1844. 8vo.—*From the Asiatic Society of Paris.*

Almanach der königlichen bayerischen Akademie der Wissenschaften für das Jahr 1844. München. 12mo.—*From the Royal Bavarian Academy of Sciences.*

Twenty-third Report of the Council of the Leeds Philosophical and Literary Society, at the close of the Session 1842–3. Leeds, 1843. 8vo.—*From the Society.*

Description of Six supposed New Species of Parasites. By Henry Denny. Article XXXVIII. of the 12th Volume of the Annals and Magazine of Natural History.—*From the Author.*

Tijdschrift voor natuurlijke Geschiedenis en Physiologie. Uitgegeven door J. Van der Hoeven, M.D., en W. H. de Vriese, M.D. Tiende Deel, 4^e Stuk, 1843. Elfde Deel, 1^e Stuk, 1844. Elfde Deel, 2^e Stuk, 1844. 8vo.—*From the Editors.*

An Address on the Recent Progress of Geological Research in the United States. Delivered at the Fifth Annual Meeting of the Association of American Geologists and Naturalists, held at Washington, D. C., May, 1844. By Henry D. Rogers, Professor of Geology in the University of Pennsylvania. Philadelphia, 1844. 8vo.—*From the Author.*

An Historical Review of the Constitution and Government of Pennsylvania from its Origin; so far as regards the several Points of Controversy, which have, from time to time, arisen between the several Governors of Pennsylvania and their several Assemblies. Philadelphia, 1808. 8vo.—*From Dr. Philip Tidyman.*

Document No. 223. 28th Congress, 1st Session. House of Representatives, Treasury Department.—*From E. Joy Morris, Esq. M. C.*

An Address delivered before the Society of the Alumni of Harvard University, on their Anniversary, Aug. 27, 1844. By Daniel Appleton White. 8vo.—*From the Author.*

ADDITION TO THE LIBRARY BY PURCHASE.

Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences. Par MM. les Secrétaires Perpétuels. Tome XVIII. Nos. 23 to 26, inclusive. Tome XIX. Nos. 1 to 4, inclusive. 4to.

Dr. Chapman announced the death of Mr. Meredith, a member of this Society, on the 26th of September, in his 73d year.

He likewise announced the death of Dr. William Jacobs, of Santa Cruz, in the West Indies, also a member of the Society; and, on motion, Dr. Horner was appointed to deliver an obituary notice of Dr. Jacobs.

Mr. Ord, on the part of the Committee appointed at the last meeting, stated that they had taken the Musical Fund Hall for Friday evening, the 25th inst. for the occasion of the delivery of the commemorative discourse, to be delivered by Dr. Dunglison, on the late President of the Society.

Stated Meeting, October 18.

Present, eighteen members.

Dr. BACHE, Vice-President, in the Chair.

Letters were announced and read:—

From the New York Historical Society, dated New York, Oct. 1844, acknowledging the receipt of certain numbers of the Proceedings of the Society:—

From the Geographical Society of London, dated London, May 22, 1844, acknowledging the receipt of the Transactions of this Society, Vol. IX. Part 1; and a second letter, dated London, Aug. 6, 1844, acknowledging the receipt of Nos. 28 and 29 of the Proceedings:—

From Count Cancrine, dated St. Petersburg, Oct. 1843, on transmitting a copy of a periodical issued by the Imperial Administration of Mines, which contains the magnetic and meteorological observations made under its direction:—and

From Dr. Asa Gray, dated Harvard University, Sept. 28, 1844, in relation to Transactions and Proceedings of this Society, transmitted and to be transmitted to the Royal Academy of Sciences of Munich.

The following donations were announced:—

FOR THE LIBRARY.

The Journal of the Royal Geographical Society of London. Vol. XIV. Part I. 1844. 8vo.—*From the Society.*

Proceedings of the Geological Society of London. With Plates, in illustration of the papers abstracted. Session 1843–44. Vol. IV. Part 2. No. 98. 8vo.—*From the Society.*

Annuaire Magnétique et Météorologique du Corps des Ingénieurs des Mines de Russie, ou Recueil d'Observations Magnétiques et Météorologiques, faites dans l'entendue de l'Empire de Russie, et publiées par ordre de S. M. l'Empereur Nicholas I., et sous les auspices de M. le Comte Cancrine, Chef du Corps des Ingénieurs des Mines, et Ministre des Finances. Par A. T. Kupffer. Année 1841. In 2 Parts. St. Petersburg, 1843. 4to.—*From the Imperial Administration of Mines, through H. E. Count Cancrine.*

The History of the late Province of New York, from its discovery to the appointment of Governor Colden, in 1762. By the Hon. William Smith. New York, 1839. 2 Vols. 8vo. These Volumes are the Fourth and Fifth of the First Series of the Collections of the New York Historical Society.—*From the New York Historical Society.*

Proceedings of the New York Historical Society, for the Year 1843. New York, 1844. 8vo.—*From the Society.*

Constitution and By-laws of the New York Historical Society. Revised, March, 1844. 8vo.—*From the Society.*

The American Journal of the Medical Sciences. Edited by Isaac Hays, M.D. No. XVI. New Series. October, 1844. 8vo.—*From the Editor.*

The Medical News and Library. Vol. II. October, 1844. No. 22. 8vo.—*From Lea & Blanchard.*

Notes on Northern Africa, the Sahara and Soudan, in relation to the Ethnography, Languages, History, Political and Social Condition, of the Natives of those Countries. By William B. Hodgson, late Consul of the United States at the Regency of Tunis. New York, 1844. 8vo.—*From the Author.*

ADDITION TO THE LIBRARY BY PURCHASE.

Astronomishe Nachrichten. Nos. 511, 512, 513. 4to.

Mr. Justice drew attention to some specimens of fish and of stalactites, obtained from the Mammoth Cave in Kentucky.

The Society proceeded to the consideration of the stated business of the evening—the balloting of candidates for membership in the Society; but it appearing that there were only fifteen qualified members present, the election could not be proceeded with.

Stated Meeting, Nov. 1.

Present, eighteen members.

Dr. PATTERSON, Vice-President, in the Chair.

Letters were announced and read:—

From the Corporation of the University of Cambridge, dated August 24, acknowledging the receipt of No. 30, of the Proceedings of this Society:—

From Mr. Wagner to Mr. Ord, dated York, England, September 30, 1844, giving some account of the early part of the meeting of the British Association in September last:—

From the Cincinnati Society, dated Philadelphia, October 23, 1844:—

From the Law Academy, dated Philadelphia, October 25, 1844:—and,

From the Academy of Natural Sciences, dated October 23, 1844, severally accepting the invitation of the Committee of the Society to attend the discourse by Dr. Dunglison, in commemoration of the late President.

The following donations were announced:—

FOR THE LIBRARY.

Annales des Mines, redigées par les Ingénieurs des Mines. Quatrième Série. Tome V. 1re Livraison, de 1844. 8vo.—*From the Engineers of Mines, Paris.*

Journal Asiatique. Quatrième Série. Tome III. No. 15. Juin, 1844. 8vo.—*From the Asiatic Society of Paris.*

Boletin Enciclopédico de la Sociedad Económica de Amigos del Pais. Agosto, 1844. Tomo 3o. 8vo.—*From the Society.*

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. II. No. 4. July and August, 1844. 8vo.—*From the Academy.*

The African Repository and Colonial Journal. Vol. XX. No. 10. October, 1844. 8vo.—*From the American Colonization Society.*

The American Journal of Science and Arts. Conducted by Professor Silliman and B. Silliman, Jr. Vol. XLVII. No. 2. October, 1844. 8vo.—*From the Editors.*

Calcutta Journal of Natural History: and Miscellany of the Arts and Sciences in India. Vol. IV. Calcutta, 1844. 8vo.—*From Dr. Dunglison.*

The Medical News and Library. Vol. II. November, 1844. No. 23. 8vo.—*From Lea & Blanchard.*

Descriptions of Malayan Plants. By William Jack. Arranged according to their Natural Families from the Malayan Miscellany. From the Calcutta Journal of Natural History, Vol IV. No. 13. 1843. 8vo.—*From the Editors of the Calcutta Journal.*

Der Tausend und Einen Nacht. Uberszet von Joseph von Hammer; und aus dem Französischen in's Deutsche von Aug. E. Zinserling. Vols. II. and III. Stuttgart, 1824. 8vo.—*From Dr. Dunglison.*

Anatomical Atlas, illustrative of the Structure of the Human Body. By Henry H. Smith, M.D. Under the supervision of William

E. Horner, M.D. Philadelphia, 1844. 8vo.—*From the Author.*

Report of the Commissioners appointed by the Secretary of the Navy to examine the several Plans of Floating Docks, submitted to the Department, September 10, 1842. 8vo.—*From Walter R. Johnson, Esq.*

Arguments of the Defendant's Counsel, and Judgment of the Supreme Court, U. S., in the Case of Vidal and another, *versus* the Mayor, &c., of Philadelphia, the Executors of Stephen Girard and others, Defendants and Appellees. January Term, 1844. Philadelphia, 1844. 8vo.—*From Thomas P. Cope, Esq.*

A Collection of Russian Poems; and a Russian Almanac, for 1832. 12mo.—*From the Executors of P. S. Du Ponceau.*

List of books bequeathed to the Society by its late President, Mr. Du Ponceau, and omitted in the catalogue of May 3d last.

Britain and America: a Collection of Pamphlets on the Public Affairs of the Two Nations. 3 Vols. 8vo.

Essai sur les Langues en Général; sur la Langue Française en particulier, et sa progression depuis Charlemagne jusqu'à present. Par M. Sablier. Paris, 1777. 8vo.

Essai Synthétique sur l'Origine et la Formation des Langues. Paris, 1774. 8vo. Anonymous. (L'Abbé Copineau.) Bound up with the above.

Den Gronlandste Ordbog, forbedret og foroget, udgivet ved Otho Fabricius. Copenhagen, 1804. 12mo.

Preces S. Niersis Clajensis Armeniorum Patriarchæ viginti quatuor Linguis Editæ. Venetiis, 1823. 12mo.

Key to the French Language: being a Complete Course of Study on a new Plan, with all the recent Improvements. By J. A. Weisse. Boston, 1842. 12mo.

A volume of French Pamphlets.

ADDITION TO THE LIBRARY BY PURCHASE.

Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences. Tome XIX. Nos. 5 to 9, inclusive. 30th July to 26th August, 1844. 4to.

Professor Frazer, from the Committee, consisting of himself, Professor A. D. Bache, and Mr. M'Euen, to whom was referred the second paper of Professor Locke on Magnetical Observations, reported in favour of its publication, which was ordered accordingly.

Professor Locke's paper contains a continuation of his observations upon the magnetic dip and intensity, made at different points in the United States during the year 1844, and includes thirty-five sets of observations made at twenty-four different stations. He then gives a series of thirteen observations made at three stations, viz: Fort Lee, N. Y., Snake Hill, and Patterson, N, J., intended to show the remarkable changes which take place both in the dip and intensity, in passing from rocks of the usual kind, to those belonging to the trappean family; which changes, so far as they regard the magnetic intensity, he announces in the following terms:—"The intensity, which ordinarily has a value along a line of moderate length not varying beyond certain moderate limits, becomes, at the base of a trappean pinnacle, extraordinarily diminished, and at the top of the same still more extraordinarily increased." These changes, as well as those of the dip which follow the same law, are illustrated by diagrams, in which the values of the dip and intensity are represented as the ordinates of a curve, the distances between the stations being taken upon the line of abscissas. Professor Locke believes these changes to be due to the assumption of magnetic properties by the trappean rocks, the axis of the magnet coinciding with the axis of figure of the hill, which is generally vertical.

Professor Locke strongly urges the propriety of multiplying observations upon these phenomena, in order to develop the general law; and concludes by returning his thanks to Col. Sabine and the British Association for the kindness and liberality with which they have tendered their assistance in his labours.

Professor Frazer, on the part of Mr. Haldeman, presented a communication, entitled "Observations on General Phonology and Alphabetic Notation, with an Attempt to adapt the Roman Alphabet to Exotic Languages, by S. S. Haldeman, A.M.," which, on motion, was referred to a Committee, consisting of Dr. Dunglison, Mr. Pickering, and Dr. Bethune.

Mr. Kane, on the part of the Committee of Arrangements, consisting of himself, Mr. Ord, and Dr. Patterson, made the

following report in regard to the discourse in commemoration of the late President, delivered by Dr. Dunglison:—

That pursuant to the notice heretofore communicated to the Society, the discourse in commemoration of our late President, Mr. Du Ponceau, was pronounced by Dr. Dunglison on the 25th of October, 1844, at the Musical Fund Hall. The Society was honoured on the occasion by the presence of the relatives of the deceased, and of numerous ladies, many of the reverend clergy, the members of the diplomatic corps, the State Society of the Cincinnati, and the officers of the army and navy in the city at the time; the officers of the several municipal corporations, the judges of the courts of the United States and State, the trustees and professors of the University and Colleges, the members of the different learned and literary societies, and a large number of citizens. The Committee herewith present the manuscript of the Discourse, and submit for the consideration of the Society the following resolutions:—

1. *Resolved*, That the Discourse pronounced by Dr. Dunglison in commemoration of the late President, Mr. Du Ponceau, be published under the directions of the Committee of Arrangements.

2. *Resolved*, That the Treasurer be, and he is hereby authorized to pay the several expenses incurred, and to be incurred, by the Committee, under the orders of the Society, provided the same shall not exceed the sum of two hundred dollars.

Both the above resolutions were agreed to by the Society.

Mr. Kane announced the death of Mr. Nathan Dunn, a member of the Society, who died at Vevay, in Switzerland, on the fifteenth of September; and, on motion, Dr. Emerson was appointed to deliver an obituary notice of the deceased.

Stated Meeting, November 15.

Present, twenty-five members.

Dr. Bache, Vice-President, in the Chair.

A letter was read from the executive committee of the New York Historical Society, dated New York, October 28, 1844,

inviting the American Philosophical Society to their fortieth anniversary celebration, on Wednesday, the 20th of November. On motion, a special letter of acknowledgment was directed to be addressed to the Society.

The following donations were announced:—

FOR THE LIBRARY.

Report intended to illustrate a Map of the Hydrographical Basin of the Upper Mississippi River, made by J. N. Nicollet, while in employ under the Bureau of the Corps of Topographical Engineers. Washington, 1843. Two copies. 8vo. Senate, 26th Congress, 2d Session, No. 237.—*From Colonel J. J. Abert, U. S. Topographical Engineers.*

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia. Vol. 1. Nos. VII. and VIII. From May, 1843, to October, 1844, inclusive. 8vo.—*From the College of Physicians.*

Encyclopædia Britannica: or, a Dictionary of Arts, Sciences, and Miscellaneous Literature; enlarged and improved. The Sixth Edition. Illustrated with nearly six hundred Engravings. Edinburgh, 1823. 23 Volumes. 4to.

Supplement to the Fourth, Fifth, and Sixth Editions of the Encyclopædia Britannica, with Preliminary Dissertations on the History of the Sciences. Illustrated by Engravings. Edinburgh, 1844. 6 Volumes. 4to.—*From Clement C. Biddle, Esq.*

An Oration deliverved at Cambridge, before the Phi Beta Kappa Society in Harvard University, August 29th, 1844. By George Putnam. Boston, 1844. 8vo.—*From Henry D. Rogers.*

Descriptio Anatomico-Pathologica Uteri duplicis, quorum uterque vario tempore gravidus erat. With a Plate. By Professor Bujalsky. St. Petersburg, 1832. A folio pamphlet in the Russian Language.—*From the Author.*

An Account of the Transposition of the Human Viscera. By Professor Bujalsky. In Russian. St. Petersburg, 1829. A folio pamphlet.—*From the Author.*

On motion of the Librarian, the thanks of the Society were given to Col. Biddle, for the valuable present of a copy of the Encyclopædia Britannica; Sixth Edition, with Supplements.

The Committee, consisting of Mr. Walker, Dr. Patterson,

and Professor Frazer, on Major Graham's communication presented on the 16th of August, and entitled "Observations on the Magnetic Dip, made at several positions, chiefly on the South-western and North-eastern frontiers of the United States, and of the Magnetic Declination at two points on the River Sabine, in 1840," reported in favour of the publication of the same, in an abridged form, in the Transactions of the Society, but as the report was not accompanied by such abridgment, as required by the laws of the Society, the paper was recommitted.

A communication was read from Professor Loomis, entitled "Astronomical Observations made at Hudson Observatory. Lat. 41° 14′ 42′6 North, and Longitude 5*h*. 25*m*. 39*s*.5 West, Third Series," which was referred to a Committee, consisting of Mr. Walker, Dr. Patterson, and Professor Kendall.

A letter from Professor Alexander, of Princeton, to Mr. Walker, dated College of New Jersey, Nov. 13th, 1844, was read, which contained a notice of some Astronomical Observations communicated to him by M. Bessel, of Königsberg, in regard to the proper motions of Procyon in Declination, and of Sirius in Right Ascension.

"One of the latest results (says M. Bessel), which have offered themselves to me, appears to be a very important one for Practical Astronomy. I have been enabled by my own observations made during the last thirty years, and also by those made at other Observatories since 1750, to establish as an indubitable fact, that the proper motions of Procyon in Declination, and of Sirius in Right Ascension, are *not* proportional to time. The difference being very sensible, it will no longer be permitted to suppose the places of these stars known for any time by their observations made at *two* epochs.

"The fact of a variable proper motion seems to indicate, that stars, which are subject to it, are parts of comparatively *small* systems, such as are double stars. The phenomenon cannot be explained by *attraction*, if the distance of the attracting mass is not very small in proportion to the distance of the star from the Sun.

A Memoir upon "this interesting matter is now printing in the Astronomische Nachrichten."

M. Bessel pays a tribute to the zeal with which Astronomy

is now cultivated in America, and to the valuable matter recently contributed by American astronomers.

Dr. Patterson remarked, that this discovery of Bessel further increased the difficulties of Practical Astronomy. First, the stars were considered as *fixed;* afterwards, their proper motions were ascertained, but were supposed to be uniform. Now these proper motions are found to be variable.

Mr. Walker observed, that there was difficulty in supposing the existence of an opake centre of attraction, and that possibly the stars Sirius and Procyon were stellar systems not divisible by our telescopes.

Mr. Walker gave a brief account of the progress of Professor Kendall's observations at the High School Observatory, since the mounting of the Ertel Meridian Circle.

The circle had been tested by reading with each of the four verniers, for every 5°, and the circle was found not to have been injured in transition, nor in mounting. The average reduction of the reading of any one vernier to that of the mean of the four being about 3″.

Although 50 feet high, the insulated tower was so still that the stars could be observed with great facility and certainty, by reflection from quicksilver, with a power of 200. The first trials of the instrument had given for the latitude of the Observatory 39° 57′ 7″; and the polar point determined by any two successive culminations of polaris differed not more than 1″ from the point obtained by the fundamental stars, using for their declinations the most recent values given by Bessel and Airy.

Mr. Walker also remarked, that the latitude found for the High School Observatory, by Mr. Paine, with the sextant of the Massachusetts Survey, as well as that which Messrs. Kendall, Riggs and himself had found from sextant observations,—after applying to the declinations of the stars formerly used, the more recent corrections of Airy,—differed less than a second from the indications of the Ertel Meridian Circle.

Mr. Walker regarded this coincidence as confirmatory of his former remarks on Mr. Paine's method of determining latitudes by a sextant, in the Proceedings, Vol. II., page 166; a conclusion of great importance, when we consider that all the latitudes of the Massachusetts survey depended upon this method.

He further stated, that Professor Kendall and his assistants had

made extensive observations of the two recent comets with the Equatorial, and had computed their elements and ephemeris, and published them in the daily papers, for immediate circulation among astronomers.

Mr. Walker concluded by remarking, that a review of the stars in the zone, from the 15th to the 30th parallel of south declination, had been commenced and carried on thus far by Mr. Joseph S. Hubbard, now Assistant of the Topographical Corps. The catalogue now contains about 250 double stars, of which only about 100 can be found in the Herschell's or South's Catalogues.

Dr. Hare mentioned, that a roseate tint may be imparted to the light from carburetted hydrogen, by the interposition of mica.

A thin sheet of this substance, curved into the cylindrical form so as to enter a glass chimney, will retain the form thus imparted, in consequence of its elasticity and the confinement of the including glass. Thus employed, mica had been found competent to correct the lurid influence of gas illumination, so much objected to by all who are desirous to appear "couleur de rose."

Very neat chimneys had been constructed, and maintained in the cylindrical form, by frames of tin plate, secured by rivets. Of course, the more delicate the frames, consistently with due firmness, the better. However costly at first, mica chimneys, he believed, would be cheaper in the long run, than those in common use.

When employed within a glass chimney, as he had described, the mica afforded the glass much protection against the flaming gas.

The mica, by which these results were obtained, when in thick plates, had a brownish red tinge, whether seen by reflected or by transmitted light.

Dr. Hare likewise entered into some arguments and considerations respecting a recent speculation of Mr. Faraday, on electric conduction, and the nature of matter, contained in the London and Edinburgh Philosophical Magazine and Journal, for February, 1844. This speculation will be fully stated and discussed by Dr. Hare, in a forthcoming number of Silliman's American Journal of Science.

Mr. Kane, on the part of the appropriate Committee, announced that the Commemorative Discourse on the late President of the Society, would be ready for delivery in a few days.

On motion of the Librarian, he was authorized to distribute the remaining copies of the Eulogium delivered on Rittenhouse by Dr. Rush.

Stated Meeting, Dec. 6.

Present, thirty-three members.

Dr. Chapman, Vice-President, in the Chair.

Letters were announced and read:—

From Professor Bujalsky, of St. Petersburg, accompanying the donation of a work on astronomy:—and

From Professor A. D. Bache, superintendent of the survey of the coast of the United States, dated Washington, Nov. 1, 1844, accompanying the sheets of a Map of New York Bay and Harbour, presented by him to the Society.

The following donations were announced:—

FOR THE LIBRARY.

The Journal of the Royal Asiatic Society of Great Britain and Ireland. Vol. VIII. Part 1. Whole number, XV. 8vo.—*From the Society.*

Journal Asiatique. Quatrième Série. Tome IV. Nos. 16, 17. Juillet, Août, 1844. 8vo.—*From the Asiatic Society of Paris.*

Map of New York Bay and Harbour, and the Environs. Founded upon a Trigonometrical Survey, under the direction of F. R. Hassler, Superintendent of the Survey of the Coast of the United States. Triangulation by James Ferguson and Edmund Blunt, Assistants. The Hydrography under the direction of Thomas R. Gedney, Lieut. U. S. Navy. The Topography by C. Renard and J. A. Jenkins, Assistants. Published in 1844, and presented under authority of an Act of Congress of the United States of June 3d, 1844, and by direction of the Treasury Department. A. D. Bache, Superintendent of the Coast Survey. In four Sheets.—*From the Treasury Department, through Prof. A. D. Bache.*

Proceedings of the Academy of Natural Sciences of Philadelphia.

Vol. II. September, October, 1844. No. 5. 8vo.—*From the Academy.*

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia. November, December, 1842, and January, 1843. No. 5. 8vo.—*From the College.*

Journal of the Franklin Institute of the State of Pennsylvania. Third Series. Vol. VIII. October, November, 1844. Nos. 4 and 5. 8vo.—*From Dr. Patterson.*

The African Repository and Colonial Journal. Vol. XX. No. 11. November, 1844. 8vo.—*From the American Colonization Society.*

The Medical News and Library. Vol. II. December, 1844. No. 24. 8vo.—*From Lea & Blanchard.*

The Zoologist: a popular Monthly Magazine of Natural History. Nos. XXI. and XXII. September, October, 1844. 8vo.—*From Edward Newman, Esq., Editor.*

The Electrical Magazine. Conducted by Charles V. Walker, Esq. Vol. I. No. 6. October, 1844. 8vo.—*From the Editor.*

L'Anatomie Génerale et Abrégée du Corps Humain. Nouvelle Édition. Par M. Bujalsky. In the Russian Language. St. Petersburg, 1844. 8vo.—*From the Author.*

Descriptio Anatomico-pathologica gemellarum sibi invicem coalitarum, in quibus duo corda pariter inter se concreta, constituebant atrium et ventriculum unicum, cum debito tamen duobus cordibus vasorum majorum numero. By M. Bujalsky. St. Petersburg, 1832. Pamphlet.—*From the Author.*

Two other Pamphlets on subjects of Anatomy and Surgery. In Russian.—*From the same.*

ADDITIONS TO THE LIBRARY BY PURCHASE.

Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences. Tome XIX. Nos. 10, 11, 12, 13. September, 1844. 4to.

Astronomische Nachrichten. No. 514. September 5, 1844. 4to.

The Committee, consisting of Mr. Walker, Dr. Patterson, and Professor Kendall, on Professor Loomis' paper, read November 15, 1844, and entitled, "Astronomical Observations made at Hudson Observatory, lat. 41° 14′ 42.6″ north, and long. $5h\ 25m\ 39.5s$ west, third series," reported in favour of publication, which was ordered accordingly.

Prof. Loomis gives the latitude of the Hudson Observatory from 63 culminations of Polaris, with the meridian circle,

41° 14′ 42″6

The paper extends the series of moon culminations to the number of 259, and contains two occultations.

The longitude of Hudson Observatory, from Greenwich, by 150 corresponding moon culminations, is as follows:—

From 72 Greenwich observations,		5*h* 25*m* 40.6*s*
33 Cambridge, E.	„	39.2
18 Oxford	„	37.8
27 Edinburgh	„	39.4

Allowing double weight to the Greenwich observations, the mean result is,

5*h* 25*m* 39.5*s*

The observations of Encke's comet in 1842, of the great comet of 1843, of the first Mauvais comet, and of the Faye comet, are given in full, with the apparent place of the stars used for comparison. The Faye comet was followed by Prof. Loomis, till the 11th of February, 1844.

This paper concludes the series of Prof. Loomis' labours at Hudson, he having accepted the appointment of Professor in the New York University. The Hudson Observatory is now in the hands of Prof. James Nooney.

Mr. Lea read a paper, entitled "Supplementary Note on the Construction of different Forms of the Magic Cyclovolute, by E. Nulty," which was referred to a Committee, consisting of Dr. Patterson, Mr. E. Morris, and Professor Kendall.

Dr. Patterson called the attention of the Society to a paper read before the Philosophical Society on the 14th of January, 1768, by Provost Ewing, prior to the union of the two societies from which this Society was formed. This paper, which has never been published, contains a general theory of magic squares, with its application. It was referred for examination to the same Committee.

Dr. Dunglison, at the request of Dr. Meigs, who was absent, read a paper, entitled "Case of Spina Bifida, by Henry Bond, M.D.," which was referred to a Committee consisting of Dr. Meigs, Dr. Dunglison, and Dr. Hays. Dr. Dunglison prefaced the reading of the paper by some remarks on the nature and

mode of production of these and similar arrests of development.

Professor Frazer read a letter from Mr. J. B. Maxwell, one of the trustees of Princeton College, to Professor Henry, dated Belvidere, Oct. 17, 1844, relating to the discovery of Mastodon bones on the farm of Mr. Abraham Ayers, near Hackettstown, New Jersey.

There are portions of the skeletons of five Mastodons—one pretty large—three of smaller size, and a calf: of the largest, only the grinders—portions of the tusks (13½ inches in circumference,) and some fragments of the larger bones remain—the rest having fallen to pieces on being exposed to the air. The bones of the calf fell to pieces in like manner, and no parts have been preserved except the grinders and the tusks, which were five or six inches long, about three-quarters of an inch in diameter, and seem to have projected more than an inch from the bone. Of the other three, the skulls and most of the larger bones are in good preservation. We measured some parts of the largest of them, as follows:—

Skull—from top of head at junction of the muscles of the neck to end of bone between the tusks—3 feet 4 inches.

„ Between the large cavities for the ears across the forehead—2 feet.

„ Orbit of the eye—vertical diameter, 6 inches.

„ Reniform orifice below the eyes, (communication between trunk and brain, &c.) 10 inches across by 4 inches vertically.

„ Oval orifice below this, (communication between trunk and throat,) 5½ inches vertically by 3 across.

„ Tusk, from insertion, 2 feet 3 inches—whole length 3 feet 1 inch, and about 3 inches in diameter.

Pelvis, 4 feet 10 inches across, by 3 feet 8 inches.

Femoral bone, 3 feet long, 1 foot 1½ inch in circumference in the middle.

Scapula, 2 feet 5 inches long, 2 feet 1 inch wide—measuring over the projection.

There were three grinders on each side above, and the same number below. The two others and the calf had four teeth on each side, both above and below, but the forward ones were evidently "milk teeth," which would have been shed at a more advanced age. In

none of these four did the back grinders appear to have cut through the gum. The largest of the five had had three grinders on each side in each jaw. All the grinders were of the same character, having the projecting conical points which distinguish the Mastodon. In one of the skulls, the tusks projected outwards and inclined upwards, while in the other two they were inclined downwards and nearly parallel. This difference, and that in the number of the teeth had induced Mr. Ayers to believe that the remains belonged to more than one species. But Mr. Maxwell considered it to be evident that the only differences are those of age and sex. The bones which he measured, he supposed to be those of a female. The other two were younger animals, as was evident both from the teeth and the sutures of the skull, and as the skull with projecting tusks seemed to have a broader and rounder outline than the others, it probably belonged to a young male.

Mr. Ayers walked with Mr. Maxwell to the spot where they were dug out, and described the position in which they were discovered. North-west of the Musconetcong Valley, in which Hackettstown is situate, lies a range of highlands about two miles wide, rising perhaps 350 feet above the valley, and separating it from the valley of the Pequest. This ridge, which is of gneiss, and has, like all our mountains, a general course of about north-east, is cut into sections by transverse depressions, or hollows running generally about south of east. Through one of these depressions, which is probably 150 feet below the general level of the range, passes the road from Hackettstown to Vienna. By looking at Gordon's Map of New Jersey, a small stream is found to cross the road nearly half way to Vienna. Mr. Ayers' house is about 100 yards beyond the stream, and the bones were found more than a quarter of a mile beyond his house in a northerly direction, and perhaps 300 yards from the road. The Map does not represent the face of the country correctly. The road runs along the northern side of the valley or depression, most of which is occupied by a swampy meadow, through which the stream flows. From the road the ground rises regularly, but pretty rapidly, probably 120 feet in 200 yards, and then descends more gradually 25 or 30 feet into a smaller depression, which, however, does not cut through the ridge like the larger one, but descends very gradually from the general level on the east, and at its western end opens on the brow of the ridge by a kind of ravine. Near this western end is a depression or basin deeper than the outlet, and forming in wet weather a pond-hole. Mr. Ayers says, that formerly the water in it

was at times four or five feet deep, but some years ago he drained it in part by a ditch four feet deep, so that now it is merely a wet swampy place, about forty yards in length by twenty-five wide. During the drought last summer it became quite dry, and he took the opportunity to dig out a portion of the earth for manure. In doing this he discovered the bones. The basin slopes gradually from the east to a depth of about twelve feet near the western side. On the top is about one foot of vegetable deposite formed of decayed leaves, &c., then about six inches of whitish sand mixed with vegetable matter, and below this a deposite, which Mr. Ayers says, when first opened, was of a yellowish colour, very much resembling in appearance the manure of a cow yard when thrown up in heaps in the winter, and had a very strong smell of the same kind. Exposure to the weather has changed its colour to the dull, bluish black of swamp earth, which it seems to be mixed with, great quantities of vegetable remains, principally of marsh plants, with scattered fragments of branches of trees, &c. In this deposite the remains were found covered from four to six feet deep, except the largest, which lay near the south-east side of the basin, and were but slightly covered. A few feet to the north of this lay the next in size on its back, and a little to the north and west of this the other two, both as if in a standing position, and the calf was found in a similar position near the north side of the basin. From Mr. Ayers' description, the bones of the largest one must have been disturbed after its death, as the tusks were found reversed alongside of the neck. Between the ribs of two or three of them, was a considerable quantity of what Mr. Ayers describes as resembling coarse chopped straw, mixed with fragments of sticks,—no doubt the contents of the stomach.

Not more than one-fourth of the basin has been examined. The openings in it have been made at random, and in each an animal has been found, so that there is probably a number more. "The question," says Mr. Maxwell, "very naturally occurs, how and when did so many of these huge animals become imbedded in this narrow space? Questions more easily asked than answered. My first conjecture before seeing the place, was that they had been mired in attempting to reach a spring or lick; but the small extent and shallowness of the basin, and the gradual descent and character of its bottom, (which as far as has been examined, is perfectly solid and like much of the ground around, closely paved with rolled stones of gneiss and limestone, generally 6 or 8 inches in diameter,) all forbid such a supposition. It is possible that they may have been swept there by a deluge,

which, from the configuration of the surrounding country, would, as it subsided, sweep through the larger depression, with a current to the east, and form an eddy through this one to the west. The whole depression has, in form, a close resemblance to such as we see formed on a smaller scale in the sand along the Delaware. But on the other hand, the number found together, most of them in a standing position, would seem rather to indicate that they had been overwhelmed in one of their native haunts, by some sudden catastrophe; and some circumstances seem to favour the supposition that this could not have been at a very remote period. This little basin receives the drainage of some fifteen acres of land, and seems to have had a considerable growth of grass and marsh plants around it. Under such circumstances, it would seem that the accumulation of vegetable matter indicates no very great antiquity. The holes were so filled with water that I could not ascertain whether the deposite below the sand showed any thing like stratification, but as far as I could judge from what was thrown out, its character was pretty uniform throughout, exhibiting the appearance of a marsh, much frequented by animals, which had trampled fragments of its plants all through it. I regretted very much that my knowledge was not sufficient to determine the species of the plants of which so many portions remain, but I thought I recognised some which are now growing in the neighbouring marshes, such as flags, cattails, &c. I hope, however, that you or some of your scientific friends, will visit the place, and obtain more accurate information than I am competent to give."

Mr. S. Roberts drew the attention of the Society to a steamboat now lying in the Delaware, intended to navigate canals, and gave a description of it and its machinery.

The steam canal boat "John Gilpin" belongs to New York, and has made three trips, within a short time, to St. John's, in Canada, having passed through the Champlain canal. Her length is eighty feet, and her extreme breadth thirteen feet four inches. When drawing three feet water, she carries forty-five tons; and with four and a half feet water, sixty-five tons.

Her steam engine is in the bow, and is of twenty horse power, having a locomotive or tubular boiler, and burning anthracite coal. The diameter of the cylinder is sixteen inches, and the length of the stroke twenty-eight inches.

The boat is propelled by two paddle wheels of wrought iron, one

on each side of the bow, and enclosed within the line of the sides of the boat. Each wheel is seven and a half feet in diameter, and two feet wide, and the paddles are of sheet iron, and inclined at an angle of about forty degrees, so as to throw the water out from the sides of the boat; the wheels revolving in planes parallel to the keel. This arrangement is peculiar, and is stated to work exceedingly well in navigating canals. It is contrived by Mr. Asa Worthington, of New York. The boat can propel herself ten miles an hour in open water; and she towed three barges from New York, bringing them through the Delaware and Raritan Canal at the rate of nearly four miles an hour. The boat is new, and her whole cost has been $5500, the hull being of wood.

The foregoing information was obtained on board the boat, from her owner, Captain J. W. Low.

The distance from St. John's, in Canada, to Philadelphia, is nearly five hundred miles; and the Champlain Canal being now frozen, the boat is going southward to the Dismal Swamp Canal, to ply there during the winter. She is said not to injure the banks more than an ordinary packet boat.

The interest felt on the subject of steam traction on canals, both in this country and in England, makes the boat well worthy of examination, especially in reference to her small size in combination with her great power for towing heavy tonnage. She could readily pass through the Pennsylvania Canal.

The observations of Mr. Roberts gave occasion to remarks from Messrs. Cresson, Baldwin, Frazer, E. Morris, and A. D. Bache, on the peculiar construction of the water-wheels of this boat, the paddles being inclined to the direction of the motion of the vessel, whilst the plane of revolution of the wheel was in that direction,—and on the theory of the position of the paddle wheel, the proper position of the wheels or propellers of a canal boat, and other points.

The Treasurer, Mr. Ord, presented his accounts for the year as required by the laws of the Society, which were referred to the Committee of Finance.

Mr. Lea, from the Committee of Publication, in conformity with the laws, laid their accounts for the year before the Society. The balance of funds in the hands of the Committee is three hundred and eighty-five dollars and sixty-four cents.

The Librarian, Mr. Ord, reported that he had surrendered to Mr. F. Blake, applying on behalf of the family of Captain Rogers, the log-book of the steam-ship Savannah, which had been deposited with the Society by the late Vice President Hopkinson, on the 3d of April, 1840.

On motion of Mr. Walker, a Committee was appointed to make and collect observations on the solar eclipse of Dec. 9. The Committee appointed were Mr. Walker, Dr. Patterson, Prof. A. D. Bache, Prof. Kendall, Mr. R. T. Paine, Prof. Alexander, Prof. Frazer, Prof. Bartlett, Mr. Lukens, Prof. Loomis, Prof. Norton, Prof. Locke, Mr. Gummere, Mr. Chas. J. Wistar, Prof. Courtenay, Prof. Cresson, Prof. Peirce, Mr. Borden, Mr. Downes, and Mr. Charles M'Euen.

Stated Meeting, Dec. 20.

Present, thirty-nine members.

Dr. PATTERSON, Vice-President, in the Chair.

Letters were announced and read:—

From the Academy of Natural Sciences of Philadelphia, dated Philadelphia, Dec. 9, 1844, acknowledging the receipt of a copy of Dr. Dunglison's discourse on the late President of the Society:—and,

From Mr. Dudley Leavitt, dated Meredith, November, 1844, accompanying tables of the moon's rising and setting.

Professor Perry, of the United States' Navy, member of the Maryland Academy of Sciences, was introduced by Mr. Walker, and took his seat.

The following donations were announced:—

FOR THE LIBRARY.

The Twenty-eighth Report of the Directors of the American Asylum, at Hartford, for the Education and Instruction of the Deaf and Dumb. Exhibited to the Asylum, May 11, 1844. Hartford, 1844. 8vo.—*From the Directors.*

An Introductory Lecture to the Course of Institutes of Medicine, &c.,

in Jefferson Medical College. Delivered Nov. 4, 1844. By Professor Dunglison. 8vo.—*From the Author.*

Introductory Lecture to the Course of Chemistry, delivered in Jefferson Medical College, Nov. 3, 1841. By Franklin Bache, M.D. 8vo.—*From the Author.*

Introductory Lecture to the Course of Chemistry in Jefferson Medical College. Delivered Nov. 6, 1843. By Franklin Bache, M.D. 8vo.—*From the same.*

Introductory Lecture to the Course of Chemistry, delivered in Jefferson Medical College, Nov. 1844. By Franklin Bache, M.D. 8vo.—*From the same.*

An Inquiry into the Distinctive Characteristics of the Aboriginal Race of America. By Samuel George Morton, M.D. Second Edition, 1844. 8vo.—*From the Author.*

A Memoir of William Maclure, Esq. By Samuel George Morton, M.D. Second Edition, 1844. 8vo.—*From the same.*

On a supposed New Species of Hippopotamus. By S. G. Morton, M.D. From the Proceedings of the Academy of Natural Sciences of Philadelphia, for February, 1844.—*From the same.*

The Committee, consisting of Dr. Meigs, Dr. Dunglison, and Dr. Hays, on the paper of Dr. Bond, entitled, "Case of Spina Bifida," read at the last meeting of the Society, presented a report thereon, recommending that an abstract of the same be made by the Reporter, to be published in the Proceedings of the Society; which recommendation was agreed to.

The child was born at term, July 5, 1833; the mother aged 40 years. The pregnancy went several days beyond the reckoning.

Upon washing the child, a spot as large as a half cent, looking like a coagulum, but covered with a thin film of membrane, was discovered at the lower end of the lumbar spine. It was destitute of the common integument, and was not raised above the surface. The spinous processes on the sacrum were absent; those of the lumbar vertebræ were present.

On the third day, the tumour was as large as a walnut, and continued steadily to increase in size, until it opened on the 27th of August, fifty-three days after the birth of the child. Although, for the first few weeks, the tumour exhibited a low and suppurating surface, yet it afterwards became covered with a tense, glossy, heated surface,

except at three distinct points, through one of which the contents were discharged.

Dr. Bond's note of the case is accompanied with drawings representing the tumour as to colour, size, vascularity and situation. The sac filled and burst repeatedly,—the fluid discharged becoming, at each successive opening, more and more turbid, and lastly puriform; while the sac acquired after each opening, an increased thickness and consistency. In the first six weeks, the health of the infant suffered but little; but at length it began to be emaciated, and to be much distressed, but was greatly relieved of uneasiness after each discharge. It died on the 69th day.

The third drawing, by Drayton, exhibits the tumour and the spine dissected. The lower terminus of the spinal cord was found within the sac; that is to say, it had passed out of the spinal canal, and with its terminal nerves was enveloped in the thickened membranes and tissues of which the sac was composed—chiefly dura mater altered by inflammation.

Dr. Bond refers to two cases treated by Sir Astley Cooper. He was deterred from making punctures in the tumour in this case, and it is evident from the dissection, that such treatment would have been unavailing.

The Committee, consisting of Dr. Patterson, Mr. E. Morris, and Professor Kendall, on Mr. Nulty's communication, entitled "Supplementary Note on the Construction and Different Forms of the Magic Cyclovolute," as published in the Transactions of the Society, Vol. IV. 1835, recommended the publication of the same in the Transactions. Publication was ordered accordingly.

The particular arrangement there described, the author deduces in his present paper from a combination of elementary magic squares of peculiar forms, and shows that from different combinations of such squares, and with attention to every property involved in the original drawing, there may be constructed 768 magic cyclovolutes. A slight limitation with regard to secondary properties enables him to extend the number of arrangements to 6144; and these he further increases to 55296 different magic cyclovolutes, with all the general properties enumerated in his first paper.

In connexion with his subject, the author presents a *new* magical arrangement, analogous to that employed by Dr. Franklin in the construction of the magic circle; but which, including more extensive

properties, imparts to it further generality. He finds 1536 magic circles with his own additional improvement here implied; 7680 of Dr. Franklin's limited construction; and finally 55296 magic circles, with further limitation, including, however, the chief property of the *sixteen* radii, and all the properties assigned to the *twenty-eight* principal and secondary rings of the magic circle.

The principles on which are founded the preceding results, the author judges of moment in respect to the magical combination of numbers; and mentions, as an instance, their immediate application to the extensive series of 256 numbers 1, 2, 3—256, first magically combined by Dr. Franklin, and afterwards by Mr. Dalby, professor in the Royal Military College, as cited by Dr. Hutton. For the purpose of comparison and remark on this subject, a *new* perfect magic square is given. It embraces the preceding series, and is capable of being made the basis of an enlarged magic cyclovolute. A corresponding arrangement is alluded to in case of a generalized magic circle, the number and varieties of which, as well as those of a magic cyclovolute, however extensive, the author conceives to be within the design and general scope of his solution.

Mr. Walker, from the Committee on the Solar Eclipse appointed at the last meeting, reported progress, and stated, that he had received letters from Professor Pierce of Harvard University, Professor Loomis of the New York University, and Professor Barnard of the University of Alabama, containing the observations on the eclipse made by those gentlemen.

A paper, containing Tables of the Moon's rising and setting, by Mr. Dudley Leavitt, was read by the Secretary, and referred to a Committee, consisting of Mr. Walker, Dr. Patterson, and Professor Kendall.

Mr. Justice stated, that glasses of immense magnitude for telescopes were now fabricated at Paris,—a circumstance on which doubt had existed in the minds of members when it was first mentioned at the meeting of the Society of the sixteenth of August. He also referred to interesting observations on the Moon's surface, made with the telescope of Lord Rosse, and with the refractor at the High School observatory of this city;—the latter distinctly exhibiting the same appearances as had been observed with the former.

A communication was read from Mr. J. P. B. Maxwell,

containing additional information in regard to the Mastodon bones, on which a communication from him was read at the last meeting.

In the description of the bones communicated to the Society at that time, Mr. Maxwell omitted to mention one circumstance, which struck him as peculiar. The back grinders, which had not yet cut through, were placed so far back, that they could be of no use to the animal in that position, and it appeared evident, that only two grinders could be in use at the same time, and that as the forward ones were worn out they would be shed, and their place supplied by those behind pushing forward;—a beautiful provision—Mr. Maxwell conceives—for an animal of long life subsisting upon hard substances.

Professor Henry, of Princeton, made an oral communication in regard to some speculations in which he had indulged, relative to the classification and origin of mechanical power.

He stated, that he was indebted for the origin of this train of thought to some remarks made by Mr. Babbage in his work on the economy of machinery, and to the late researches of the German and French chemists on the subject of vital chemistry; indeed, all the views contained in the communication, might perhaps be found in detached portions in different works; but he believed, that they had never before been brought together and presented as a whole.

He defined mechanical power to be that which is capable of overcoming a constant resistance, and of producing a continued motion; or, in the language of the engineer, it is that which can be employed to "do work." It is here used in a more restricted sense than force, which is applied, as a more general term, to whatever tends to produce or resist motion. The following list of mechanical powers, he believed, would be found to include all the prime movers employed at the present time, either directly or indirectly, in producing mechanical changes in matter, and all these could be referred to two sources:—

Class 1st.	Water power, Tide power, Wind power,	Referable to celestial disturbance.
Class 2d.	Steam and other powers developed by combustion. Animal power.	Referable to that which is called vital action.

These natural motive principles are not always directly employed in producing work, but are sometimes used to develope other power, by disturbing the natural equilibrium of other forces, and in this way, they give rise to a class of mechanical movers, which may be called intermediate powers. It will be evident on a little reflection, that the forces of gravity, cohesion, and chemical attraction, with those of the imponderable agents of nature, so far as they belong to the earth, all tend to produce a state of stable or permanent equilibrium at the surface of our planet,—that in all cases, before the energies of these forces can be exhibited, the disturbing effect of some extraneous force is required,—hence these principles in themselves are not the primary sources of power, but are merely secondary agents in producing mechanical effects;—or, in other words, it will be found, that while the approximate source of every power is the force exerted by matter, in its passage from an unstable to a stable state of equilibrium, yet, in all cases, it may be referred beyond this to a force which disturbed a previously existing quiescence. As an example, we may take the case of water power, in which the mechanical effects are approximately due to the return of the water to a state of stable equilibrium on the surface of the ocean; but the cause of the continued motion is the force which produced the original disturbance, and which elevates the liquid in the form of vapour. Also, in the phenomena of combustion, the immediate source of the power, evolved in the form of heat, is the passage from an unstable state into one of stable combination of the carbon and hydrogen of the fuel, and the oxygen of the atmosphere; but this power may ultimately be resolved into the force which caused the separation of these elements from their previous combination in the state of carbonic acid and water.

Now the only forces of any importance, which operate at the surface of the earth to counteract the tendency to a general state of stable equilibrium are those derived from two sources, namely, ***celestial disturbance***, and what is called ***vital action;*** and hence all mechanical power, as well as all activity on the surface of the globe, may be referred to these two sources. The only exception to this general regulation is the comparatively limited effect of volcanic action, which is a power, from whatever source it may be derived, that must tend to exhaust itself.

Thus far the author considered his conclusions founded on well established physical laws; and perhaps here the true spirit of inductive philosophy would admonish him to stop: but they who are disposed to continue the speculation, and to consider the results of

the late researches of the German and French chemists as well established truths, may extend the generalization so as to reduce all mechanical motion on the surface of the earth to a source from without. Thus, according to Liebig, Dumas and Boussingault, the mechanical power exerted by animals is due to the passage of organized matter in the body from an unstable to a stable equilibrium; and as this matter is derived in an unstable state from vegetables, and the elements of these again from the atmosphere, it would therefore appear to follow, that animal power is referable to the same sources as that from the combustion of fuel, namely, the original force which separates the elements of the plants from their stable and original combination with the oxygen of the atmosphere. But what is this power which furnishes the plant with the material of its growth? Is it due to a constantly created vital power; or, since its effects are never directly exhibited but in the presence of light, may not the opinion of many chemists of the present day be adopted, namely, that it is due to the decomposing energy of the sun's rays, which are found to exhibit a wonderful decomposing effect in cases where no vital phenomena are present.

If this hypothesis be adopted, it must be supposed, that vitality is that mysterious principle which propagates a form and arranges the atoms of organizable matter, while the power with which it operates, as well as that developed by the burning fuel and the moving animal, is a separate force, derived from the divellent power of the sunbeam. It is true, that this is as yet little more than a mere hypothesis, and as such forms no part of positive science, but it appears to be founded on a clear physical analogy, and may therefore form the basis of definite philosophical research.

The remarks of Professor Henry gave rise to a discussion in which Dr. Hare, Professor Henry and Dr. Meigs participated.

Dr. Meigs animadverted on some observations of M. Colombat de l'Isère on diseases of the Clitoris, and detailed a case of excessive enlargement of the organ.

The clitoris was injured by a fall fourteen years ago; since which time it has been constantly increasing in size. The patient was married eight years since, and has two children. The tumour was indolent, and pendulous from the front of the os pubis; and consisted of skin and genito-urinary mucous tissue. It formed a close-sac, filled with a fluctuating mass. Dr. George Norris, sur-

geon of the Pennsylvania Hospital, opened the sac by plunging a lancet into the most dependent portion. Twenty-two ounces of dark red viscous fluid escaped, consisting of blood perfectly inodorous, and which had undergone no other alteration than that which takes place in imperforate uterus or vagina. The fluid resembled precisely that which Dr. Meigs has seen discharged in cases of atresia vaginæ. As soon as the liquid was withdrawn, the sac shrunk like a scrotum. No inflammation nor other inconvenience followed the operation, which was done in May, 1844. In November, 1844, the sac was refilling, and contained about eight ounces of fluid.

Dr. Meigs regarded the case as interesting on account of the perfect resemblance of the contained fluid to that which is occasionally preserved for months, and even for years, within the uterus, or within some part of the reproductive organs. He does not suppose that blood could be preserved for so many years within a living tissue composed of materials or substance divested of the qualities of that which composes the apparatus of reproduction. If this opinion be well founded, the case—he conceives—may serve to shed an additional gleam of light on the differential powers and qualities of the tissues whose consideration constitutes the subject of general anatomy.

Col. Biddle, on the part of the Committee of Finance, reported a recommendation of the following appropriations for the ensuing year, which were agreed to:—

Proceedings, ...	$300
Binding, ...	200
Hall, ...	100
Journals, ...	200
General Account, ...	700
	1500

He further read a statement prepared by the Treasurer, exhibiting the character of the expenditures made by the Society for some years past, and the nature and extent of its resources.

Mr. Walker requested the loan of the large lens belonging to the Society by the High School Observatory; which was agreed to by the Society,—the Curators being instructed to effect the same.

Dr. Hare presented certain resolutions in regard to the election of officers of the Society, and moved that they be printed; when, on motion of Mr. Kane, they were laid on the table.